

**To:** Reich[kreich1803@charter.net]; Richman, Lance[Richman.Lance@epa.gov]  
**From:** Reich  
**Sent:** Fri 8/14/2015 5:08:59 PM  
**Subject:** Bill Reich - JDI Biologic LLP - Following up on the Gold King Mine Spill - Potential Assistance

Hi Lance,

I imagine you are busy. I got back from Pahrump, Nevada early this morning. I spent the past few days setting up a wastewater treatment test program.

I was just following up on our conversation from earlier this week, and the email train below. I followed up with our chemist again, and he is extremely confident that our Oil Field Brine Neutralization product will also be extremely effective in neutralizing the mine waste solutions contained in the Gold King holding ponds. The product will encapsulate the metals into the pond sludge, while treating/cleaning the water such that it should meet Colorado water quality standards for discharging into the downstream creeks (Cement Creek), and ultimately the Animas and San Juan Rivers; eventually reaching Lake Powell over time. As you and I discussed, oil field brines are heavily contaminated; often worse than mine waste solution.

Do you have any suggestions for getting this product information out to the appropriate individuals for review?

I also did some brainstorming with my wastewater engineer regarding potential river bed rehabilitation issues. There are ways this could be accomplished. It will require river bed assessment, sampling etc, to get baseline data. Along with geotech engineering and geomorphology work, but it can be done. It will take time, as we all are keenly aware, but it can be done. The initial baseline sampling is going to be a key item. A good time of year to start it. The creek and river flows are most likely at low flow rates due to the season. Get it done now, before any early snows etc. could increase flows. Obviously the other key item is treating the solutions that are in the containment ponds.

Any guidance and suggestions you have would be extremely beneficial. Me and my colleagues are available any time to discuss how we can assist EPA in remediating the spill issue. The upshot is, this was an accident. But with the proper effort, it can be corrected. And, I see an opportunity to not only remediate the impacts to the Animas and San Juan rivers, but possibly remediate Cement Creek and Silverton Creek.

As always call or email with questions. I am looking forward to discussing issues with you and potentially Region 8 staff.

Best Regards,

Bill

William J. Reich  
Vice President and Chief Scientist  
JDI Bio Logic LLP  
Reno, Nevada 89521

Cell Phone: 775-530-7454

Work Phone: 435-565-1575

email: bill.jdibio@charter.net

website: www.jdibiologic.com

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From: "Reich" <kreich1803@charter.net>  
Sent: Tuesday, August 11, 2015 4:35 PM  
To: <Richman.Lance@epa.gov>  
Cc: "Kim and Bill Reich" <kreich1803@charter.net>  
Subject: Fw: Regional Response Team IX (AZ, CA, NV)

> Lance,  
>  
> Per the email below. Another data sheet. We are using a re-formulation  
> of  
> this, our standard wastewater treatment product, for treating the oil  
> field  
> brines down in Texas. The treated water meets state water quality  
> standards  
> for "agriculture irrigation". The oil field brine product reformulation  
> uses zero valent iron technology to immobilize metals and other brine  
> constituents in a sludge, while cleaning/treating the water for discharge  
> as  
> agriculture water. This is the same product we are going to use, most  
> likely a slight re-formulation, to run a test program for neutralizing  
> cyanide process solutions from gold mine heap leach facilities, and also  
> cyanide mill tailings solutions. The heap leach test program should be  
> starting next week.  
>  
> The oil field brine/cyanide neutralization product could be useful in  
> treating the contained mine wastes from the Golden King Mine. Assuming  
> the  
> treatment works as expected, the heavy metals would be immobilized in the  
> sludge at the bottom of the containment ponds, while the treated water  
> could  
> potentially be discharged downstream. Management of the treated  
> water/solution inventory in the ponds is obviously going to be a key  
> management issue.  
>  
> I talked to our chemist this afternoon, after our call, and also discussed  
> river rehabilitation. That becomes a bit more problematic. Treating and  
> rehabilitating flowing rivers, if needed, is an interesting process. I  
> spent 14 years up in Missoula, Montana, working as a forester, and clearly  
> remember the Clark Fork River Superfund cleanup. Still ongoing if I  
> recall?  
> Richman, Lance<Richman.Lance@epa.gov>;  
>  
> I will provide the oil field brine/mining product data sheet to you when I

> receive it. It is currently being updated.  
>  
> Thanks again for your time. Let's keep in touch.  
>  
> Regards,  
>  
> Bill  
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> William J. Reich  
> Vice President and Chief Scientist  
> JDI Bio Logic LLP  
> Reno, Nevada 89521  
>  
> Cell Phone: 775-530-7454  
> Work Phone: 435-565-1575  
>  
> email: bill.jdibio@charter.net  
>  
> website: www.jdibiologic.com  
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> -----  
> From: "Reich" <kreich1803@charter.net>  
> Sent: Wednesday, August 05, 2015 11:53 AM  
> To: "Krala, Susan E CI> V" <Susan.E.Krala@uscg.mil>  
> Subject: Re: Regional Response Team IX (AZ, CA, NV)  
>  
>> Hi Susan,  
>>  
>> One final product sheet as an fyi. Regarding wastewater treatment,  
>> RBR-1000  
>> is our wastewater treatment product. Data from on going projects clearly  
>> illustrate some amazing results for improved wastewater treatment plant  
>> efficiencies and corresponding reductions in plant operating costs. We  
>> are  
>> starting a new wastewater treatment program next week with a private  
>> utility  
>> corporation. We expect similar results for this program.  
>>  
>> We are also using a "re-formulation" of the RBR-1000 to clean/neutralize  
>> oil  
>> field brines for a confidential client. Excellent results so far. The  
>> cleaned water meets state water quality standards for "agriculture  
>> irrigation".  
>>  
>> Regards,  
>>  
>> Bill  
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>>  
>> William J. Reich  
>> Vice President and Chief Scientist  
>> JDI Bio Logic LLP

>> Reno, Nevada 89521  
>>  
>> Cell Phone: 775-530-7454  
>> Work Phone: 435-565-1575  
>>  
>> email: bill.jdibio@charter.net  
>>  
>> website: www.jdibiologic.com  
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>> From: "Krala, Susan E CIV" <Susan.E.Krala@uscg.mil>  
>>  
>> Sent: Wednesday, August 05, 2015 9:59 AM  
>> To: "Reich" <kreich1803@charter.net>  
>> Subject: RE: Regional Response Team IX (AZ, CA, NV)  
>>  
>>> Bill,  
>>>  
>>> Given your involvement with wastewater treatment, you may be interested  
>>> in  
>>> a presentation we had at our last RRT meeting near Sacramento, CA. See  
>>> cWater Solutions at <http://www.rrt9.org/go/doctype/2763/268858/>  
>>>  
>>> -- Susan  
>>>  
>>> -----Original Message-----  
>>> From: Reich [mailto:kreich1803@charter.net]  
>>> Sent: Wednesday, August 05, 2015 9:50 AM  
>>> To: Krala, Susan E CIV  
>>> Cc: Kim and Bill Reich  
>>> Subject: Re: Regional Response Team IX (AZ, CA, NV)  
>>>  
>>> Hi Sue,  
>>>  
>>> Email received! Thanks for taking the time to discuss things this  
>>> morning.  
>>> I will check out the links you sent in your email. I look forward to  
>>> talking with Lance Richman also. If Lance is based in Las Vegas, I  
>>> suspect  
>>> we might have one or two mutual colleagues.  
>>>  
>>> I will forward you the information for our Micromix Aqua product in the  
>>> next  
>>> email.  
>>>  
>>> I look forward to keeping in touch with you.  
>>>  
>>> Best Regards,  
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>>> Bill  
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>>>  
>>> William J. Reich

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>>> Vice President and Chief Scientist  
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>>> Reno, Nevada 89521  
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>>>  
>>> email: bill.jdibio@charter.net  
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>>> From: "Krala, Susan E CIV" <Susan.E.Krala@uscg.mil>  
>>> Sent: Wednesday, August 05, 2015 9:41 AM  
>>> To: <KReich1803@charter.net>  
>>> Subject: Regional Response Team IX (AZ, CA, NV)  
>>>  
>>>> Hello,  
>>>>  
>>>> As we discussed, information about quarterly meetings of the RRT are on  
>>>> the Calendar at [www.rrt9.org](http://www.rrt9.org).  
>>>>  
>>>> You can also see slide shows from previous meetings by choosing RRT9 on  
>>>> the menu, and then Meetings, -or-  
>>>> <http://www.rrt9.org/go/doctype/2763/55055/>  
>>>>  
>>>> EPA is hosting the meeting in Boulder City, I will put you in touch  
>>>> with  
>>>> the host, Lance Richman, via separate email.  
>>>>  
>>>> Thank you for contacting me.  
>>>>  
>>>> -----  
>>>> Susan Krala, MSM, MEP  
>>>> Regional Response Team Coordinator  
>>>> Region IX, Arizona-California-Nevada  
>>>> 11th Coast Guard District, Alameda, California  
>>>> (510) 437-2794 Pacific  
>>>> uscg@rrt9.org delivers to Internet & work  
>>>> [www.rrt9.org](http://www.rrt9.org)  
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